

Study design-Senolytic doses in human livers using proof-of-concept perfusion

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 An abbreviated version of this protocol was published in Science Translational Medicine in Dec 2022


Senolytic treatment preserves biliary regenerative capacity lost through cellular senescence during cold storage

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Detailed protocol

- Human livers discarded from transplantation were received and prepared for proof-of-concept machine perfusion
- Upon arrival, the left lateral segments (Couinaud Segments II and III) were split and cannulated using portal vein branches for perfusion. One segment was perfused at 37°C for 2 hours with 1L of sterile Phosphate Buffered Saline (PBS) supplemented with senolytics and the other segment was perfused with PBS and DMSO.
- Senolytics were prepared by dissolving 5 mg/kg Dasatinib (LC Laboratories) and 50 mg/kg Quercetin (Sigma-Aldrich) dissolved in 1 ml of DMSO. This mixture was added to the sterile PBS for the senolytic perfusion.
- All fluids were recirculated using the perfusion system for the duration of the experiment.
- Biopsies were obtained prior and after perfusion for the vehicle and senolytic perfused segments

Related files

 Senolytic dose calculations.xlsx



How to cite: (Readers should cite both the Bio-protocol preprint and the original research article where this protocol was used)

1. Forbes, S. and Ferreira-Gonzalez, S. (2023). Study design-Senolytic doses in human livers using proof-of-concept perfusion. Bio-protocol Preprint. bio-protocol.org/prep2279.
2. Ferreira-Gonzalez, S., Man, T. Y., Esser, H., Aird, R., Kilpatrick, A. M., Rodrigo-Torres, D., Younger, N., Campana, L., Gadd, V. L., Dwyer, B., Aleksieva, N., Boulter, L., Macmillan, M. T., Wang, Y., Mylonas, K. J., Ferenbach, D. A., Kendall, T. J., Lu, W., Acosta, J. C., Kurian, D., O'Neill, S., Oniscu, G. C., Banales, J. M., Krimpenfort, P. J. and Forbes, S. J. (2022). Senolytic treatment preserves biliary regenerative capacity lost through cellular senescence during cold storage. Science Translational Medicine 14(674). DOI: [10.1126/scitranslmed.abj4375](https://doi.org/10.1126/scitranslmed.abj4375)

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